



Healthcare Analytics in Navy Medicine

Perspectives and Methods for Decision-Making

FOCUS ON THE INTEGRATION OF DIRECT AND PURCHASED CARE

Perspectives on Recapturing Care

John E. Montgomery, Ph.D.

When we speak of optimizing any characteristic of the Military Health System (MHS), two perspectives need to be reconciled: 1) optimizing the system globally and 2) achieving local optimization. The latter is best done within the context of an extant global strategy. Global optimization may exclude one or more individual Military Treatment Facilities (MTFs) from providing particular services or may specify which MTFs can provide specific services. This is what we would expect, for example, for graduate medical education (GME) programs supporting our readiness mission. This article provides a brief discussion of MTF optimization at the local level with respect to the direct and purchased care components of the MHS and assumes that a global framework has been established.

Since the inception of the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) in 1966, it has been convenient for leaders, planners, and managers to think of the Military Health System (MHS) as a relatively simple two-part system in which demands for care arising from an eligible population are satisfied either in the direct care system of military hospitals and clinics or in the purchased care system of the civilian community. Optimizing system performance may likewise be conceptualized according to a simple model that seeks an allocation of services between the two parts of the system in order to maximize or minimize a performance criterion, subject to a set of resource constraints. For example, at a given MTF, with a given mix of providers and other resources, we might ask the question: “What is the best way to allocate demands for service from the local market area between direct care and purchased care so as to minimize the cost of care?”

A variation of this is the so-called “make-buy” question: “Given a known demand for services, how much would it cost to provide the needed care at our MTF compared with buying it in the civilian community?”

While the simple model just referred to may be useful in conceptualizing the relationship between the direct care and purchased care components of the MHS, as a practical matter it represents a gross oversimplification of how the two components of the system relate to each other. Demands are imperfectly known, the resources needed to satisfy demands depend on patterns of practice that may vary both between and within the two parts of the system, and the proper criteria for optimization (e.g., readiness, experience of care, population health, and cost per capita) may vary greatly from MTF to MTF, depending on unique missions with respect to readiness, graduate medical education (GME), and the needs of the population to be supported. It is necessary to apply critical thinking to the optimization problem to ensure that desired outcomes are achieved.

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A Short History of Direct Care and Private Sector Care Utilization Trends

In the mid-1980's, over 70 percent of all outpatient and inpatient workload for CHAMPUS-eligible beneficiaries (active-duty family members, retirees, their eligible family members, and survivors) was performed in the direct care system. CHAMPUS was at the time perceived as a kind of uncontrolled release valve for MTFs, which not only drained workload but also resources from MTFs as the ever-increasing CHAMPUS bill had to be paid. Some spoke of a “death spiral” for the direct care system



in which, as more funds were needed for civilian care, less were available for direct care, leading to more funds being needed for civilian care, and so on. There was increasing concern about loss of direct care workload to the private sector.

These concerns were among the principal drivers of DoD and congressional actions that led to the development and implementation of the CHAMPUS Reform Initiative (CRI) in 1988 and the various generations of Managed-Care Support (MCS) contracts that have followed. In all of these developments, the idea of MTF optimization through recapture of CHAMPUS workload has played a central role, with the MCS contracts requiring the contractors to work closely with regional MHS officials and MTF commanders to ensure that MTFs have every opportunity to take on as much of the demand for services as possible. Tools to accomplish this included resource-sharing programs to augment MTF capabilities, control of enrollment options (MTF versus civilian), and right-of-first-refusal (ROFR) systems. Despite these measures, the civilian share of overall MHS costs has continued to rise.

Twenty-five years later the allocation of services for non-active-duty care has been reversed, with 70 percent of that care being provided in the civilian community. This loss of market share to purchased care over the decades has been accompanied by a fairly steady mantra from all quarters of “recapture, recapture, recapture,” but that mantra alone will accomplish little without careful consideration of some basic principles that should apply to MTF optimization at the local level.

Principles of MTF Optimization

Given this set of circumstances, how should local MTF leaders, managers, and analysts begin to address optimization? The following principles are offered for consideration:

- **Mission is paramount.** The first priority for a local MTF should be to do all that is necessary to meet its readiness and GME missions. This includes garnering necessary resources and allocating them in a way that ensures mission requirements will be met. In some cases, it means favoring one type of care over another regardless of cost (e.g., general surgery over dermatology) to ensure the military force is ready to deploy and that providers are properly trained. Mission is the primary objective of system performance, but is also a constraint that must be imposed on all other attempts to optimize MTF performance. *It is only in the context of meeting mission requirements that MTF optimization can be achieved.*
- **Preferred practice patterns are essential.** Regardless of whether clinical resources are used for critical mission performance or for secondary purposes, suboptimal performance will ensue unless clinically proven practice patterns and protocols are adhered to. For example, any attempt to optimize performance in the treatment of low-back pain will be thwarted if providers in either the direct care or purchased care sectors do not adhere to generally agreed upon guidelines for care, such as an initial preference for non-surgical interventions, reasonable waiting periods before proceeding to surgery, and due consideration of minimally invasive procedures before proceeding to full-blown spinal fusion. If local providers, either in the direct care or purchased care systems, rush to the end of this array of care options, resources will inevitably be wasted in performing unnecessary surgeries rather than in providing the advantages of a broader range of effective treatment options to the eligible population. *Adhering to best practices is fundamental to the utilization of direct care and purchased care providers in optimizing performance.*
- **“Recapture” of civilian care must be selective.** Continuing with the spinal fusion example above, if a group of civilian providers in the local civilian community creates a demand for spinal fusion by rushing to it in almost every case, the fact that the local MTF is able to provide more care for low-back pain according to more appropriate protocols may not make any difference in civilian care costs because whatever care is redirected to the MTF will simply be replaced by more potentially inappropriate procedures performed in the civilian community for MHS beneficiaries and others. The attendant costs for non-beneficiary care, where paid via other government programs, also have consequences because they compete with DHP funding within the federal budget. An equally non-productive recapture scenario would occur if the MTF uses inappropriate protocols and induces more demand for inappropriate surgeries. In this context, the appropriate mantra might be “control and recapture.” Obviously, our opportunities for control of inappropriate utilization are greater on the direct care side of the system, but some opportunities are available to us on the purchased care side as



well, under the auspices of the MCS contracts. Practice patterns should be brought under control in both parts of the system. *Simply bringing as much care into the direct care component as possible is unlikely to achieve meaningful optimization.*

- **Marginal costs should be considered.** Another rational approach to recapturing civilian care is to focus care that our MTFs can do at a lower marginal cost than the price in the civilian community, rather than making comparisons based on average direct care costs. We must perform an analysis that takes our unique mission requirements into consideration and then compare the additional resources needed for recapture of care with the cost of purchasing care in the civilian community. This marginal-cost approach will generally provide some advantage to direct care alternatives for care; but even so, *we cannot assume that providing services in the direct-care system will always be the lower-cost alternative or the best use of MHS resources.*
- **Carefully weigh patient-care quality.** The literature supports the intuitive position that a provider needs to maintain a certain volume of experience to maintain skills at a level which will justify an expectation of higher quality outcomes being more likely. Such is the case with joint replacement procedures. It would not necessarily be in the patient's or our institution's best interest to blindly recapture those procedures where the volume of experience we would maintain would still be insufficient to yield an outcome expectation at least on par with what could be expected by referring that care to another institution, either within the direct care system or under purchased care. Similarly, even if there is a global strategy to recapture births, local strategies need to account for their capabilities to handle high-risk cases versus alternative sources of care that may be better equipped. *The quality of care cannot be ignored, and the best interests of the patient should always be an important factor in recapture strategies.*

Conclusion

In order to optimize Navy Medicine's performance at the MTF level, it is necessary for our primary focus to be on mission accomplishment. Next, we must seek to ensure that services within both the direct- and purchased-care components of the system are provided according to best practices. Taking mission requirements, marginal costs and quality of outcomes into account, we must carefully analyze which services can be provided most

cost-effectively within the direct-care system. Such an analysis is by no means easy, but an awareness of some of the key principles involved should lead to better outcomes as we carefully consider what types of civilian care to recapture as we seek to optimize system performance.

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SKILLS AND METHODS

—PROCEDURE PERPLEXITIES

Purchased care providers who seek reimbursement from TRICARE are generally required to follow standard rules for the submission of claims data. The intent of claims data is to capture information for the purposes of billing and receiving reimbursement for services provided. Conversely, data captured from services provided at the MTF are generally intended for collection and measurement at the patient, provider, and clinic level, but not for billing purposes. Often, these intentions conflict when standard claims rules for reporting professional services procedures are considered. This article describes these perplexities of CPT/HCPCS procedure reporting and notes where contradictions exist between purchased and direct care data sources.

Bundled Procedures

For purchased care providers, there are a number of services/supplies that have CPT/HCPCS codes for which payment is bundled into the reporting and payment for other related services. These bundled procedures are intended to represent all routine care associated with a primary procedure and may not be separately reported. Some examples of bundling include:

- Routinely bundled services, such as suturing and other necessary activities performed during surgery
- Duplicative services (e.g., dialysis for an entire month instead of each time dialysis is performed)
- Preoperative and postoperative care included in a global surgical package (i.e., global periods described below)
- Injection services rendered at the same time as any other physician fee schedule service
- The interpretation of tests or collection of specimens performed or ordered as part of, or in conjunction with,



visit or consultation services (e.g., EKG interpretations and blood draws)

Bundling software is used by claims processors to ensure that TRICARE only pays for services bundled appropriately by purchased care providers. In direct care, bundling is used whenever possible; however, there are MHS specific coding guidelines that prevent the use of standard bundling practices in an effort to appropriately account for MTF workload. The Uniform Biostatistical Utility (UBU) Coding Guidelines (http://www.tricare.mil/ocfo/bea/ubu/coding_guidelines.cfm) should be consulted for these exceptions.

Global Periods

The concept of global periods applies to surgical care and some non-surgical procedural care billed to TRICARE. The global period for a procedure is the interval of time during which certain pre-procedure, same day, and follow-up services provided are considered to be included in the global billing package. For purchased care claims, the CPT code for the primary procedure, relative value units (RVUs), and payment represent the complete package of care, including the primary procedure itself and any associated routine care provided during the global period. When purchased care providers submit global bills, they are generally not allowed to submit separate claims for follow-up care and certain pre-procedure care (the preoperative visit where the decision was made to have surgery is excluded from this period). TRICARE generally

follows the global periods published by the Centers for Medicare and Medicaid (CMS) in the National Physician Fee Schedule. The global period assignments are either 0 days or 10 days for minor procedures or 90 days for major procedures. Other designations assigned to codes indicate when the global period concept does not apply. Table 1 shows these global period designations and describes how they are applied.

Unlike purchased care, all pre-procedure and follow-up care normally included in the global period are generally recorded as separate events in direct care data. As a result, when comparing direct and purchased care, adjustments must be made to account for these differences. Fortunately, the RVUs applied to procedural care in direct care data sources have been adjusted so that double-counting does not occur. For example, a cataract surgery (CPT code 66850) would have 10.55 RVUs if the procedure were done in the purchased care sector, which includes preoperative care, as well as routine postoperative care within the 90-day global period. However, if the surgery were performed in direct care, preoperative and postoperative care are captured individually, and the associated RVUs are disassembled to assign RVU totals to individual codes. As a result, the cataract surgery procedure is assigned a value of 7.39 RVUs in direct care data (the proportion for the cataract procedure by itself).

In purchased care, when the primary procedure being billed is performed in an inpatient setting, the global period application blurs the line between inpatient and

Table 1. Global Periods and Applications

Global Period	Application
000	Endoscopic or minor procedure with related preoperative and postoperative relative values on the day of the procedure only are included in the fee schedule payment amount; E/M services on the day of the procedure are generally not separately reimbursed.
010	Minor procedure with preoperative relative values on the day of the procedure and postoperative relative values during a 10 day postoperative period are included in the fee schedule amount; E/M services on the day of the procedure and during the 10-day postoperative period are generally not separately reimbursed.
090	Major surgery with a 1-day preoperative period and 90-day postoperative period are included in the fee schedule amount; E/M services on the day of the procedure and during the 90-day postoperative period are generally not separately reimbursed.
MMM	Maternity codes; the usual global period concept does not apply. TRICARE assigns a global period that includes all care related to the pregnancy after the pregnancy is confirmed.
XXX	Global concept does not apply to the code.
YYY	Subject to individual pricing and determination whether the global concept applies.
ZZZ	The code is related to another service and is always included in the global period of the other service.



outpatient services. For example, a total hip replacement surgery (CPT code 27130) frequently occurs in an inpatient hospital setting; however, the 90-day global period for this procedure includes a preoperative visit after the decision to operate – generally performed in an outpatient setting – and any follow-up care, postoperative visits, pain management, supplies, and miscellaneous services (e.g., removal of casts and splints) provided 90 days after the procedure – also generally performed in an outpatient setting. In direct care, the encounters and associated RVUs are recorded where they are performed, regardless of the global period. Suggestions for disassembling global bills for the purposes of segregating inpatient and outpatient care are provided in Volume 1, Issue 4 (Focus on Obstetric Services) of *Healthcare Analytics in Navy Medicine*.

Units of Service and Units of Measure

A unit of service is the number of times a procedure is performed (e.g., multiple biopsies) or the amount of time (e.g., 15 minute intervals for most physical therapy procedures), number of supplies (e.g., number of shoe inserts), or days that a particular HCPCS/CPT code is performed or supplied. The unit of service is a function of the unit of measure, which indicates what the service is – an office visit, a count of specific items or services, a package of services, a unit of time, a unit of distance, or the volume/size of an item. Table 2 demonstrates how units of measure can vary for various CPT/HCPCS codes.

In order to add or compare units of service, units of measure must be consistent in their definition. Likewise,

in order to compare units of service between two sectors of healthcare delivery, units of measure must be consistently applied. Unfortunately, units of measure are not published explicitly in MHS data sources. Instead, the unit of measure is usually indicated in the procedure description or in the coding rules for bundling and global billing. When performing calculations on units of service for groups of procedures, it is important to first understand how the associated units of measure might vary between individual procedure codes.

Analysts should also note that the current “Visit” variable in M2’s purchased care professional services files (i.e., TED Non-Institutional Summary and Detail subclasses) is simply the total units of service indicated on the record for a specific line item. Depending on the procedure code contained on the record (and its associated unit of measure), this may not necessarily be a count of times the patient was seen by a provider in a clinic. This differs from how visits are counted in direct care data (i.e., CAPER Summary and Detail subclasses), where a single encounter at an MTF counts as one visit, even if multiple procedures are performed during the encounter. Caution should be taken when comparing visit counts between purchased care and direct care data sources to ensure the procedures included in the comparison are counted and measured consistently. For purchased care data, this generally requires the construction of an “episode of care” record using claim records for the same patient per provider per day of service.

Table 2. Examples of CPT/HCPCS Codes and Units of Measure

CPT/HCPCS Code	Code Description	Unit of Measure
99213	Office/outpatient visit of low to moderate complexity	Visit
97761	Prosthetic training; upper and/or lower extremity; each 15 min	15 min of a visit
A0021	Ambulance, out of state, per mile	Mile
73020	Radiology exam, shoulder; 1 view	Image
23600	Treatment of proximal humeral fracture	Setting + follow-up care
59400	Vaginal delivery, pre- and postpartum care	Delivery, pre- and postpartum care
15111	Skin Graft	Size of graft
33510	Coronary artery bypass, vein only, single graft	Procedure + pre- and post-op care



DATA AND INFORMATION SYSTEMS

—DIFFERENCES IN DATA TYPE AVAILABILITY

The availability of specific types of health information differs depending on whether the care was provided in an MTF (i.e., direct care) or in the civilian community (i.e., purchased care). When care is provided in the MTF, MHS operational and other management systems create important types of data that are not available from claims information submitted by civilian providers. This article discusses some examples of these differences in data types between direct and purchased care.

Vital Sign Information

Vital sign information is available in the MHS Data Repository (MDR) for appointments where AHLTA was used to document the encounter. Important data elements include height and weight (BMI), blood pressure, pulse, oxygen saturation, temperature, pain scales, and use of alcohol and tobacco. Vital sign records can be linked to the encounter record where the vitals were taken. These types of data are highly valuable for understanding efficacy of treatments and assessing the status of a patient at the time of an encounter. One important feature of the MDR vital sign data are that person identification problems originating in the source (AHLTA) have been corrected using information from DEERS and CHCS. Some of this vital sign data are also passed from the MDR to other systems, such as CarePoint, and eventually M2.

Detailed Clinical Information

For both direct and purchased care, procedure code data about laboratory and radiology services are generally available for outpatient orders. However, for direct care only, both inpatient and outpatient orders are available in the MDR, along with the results of the tests. The laboratory data are coded consistent with industry standards (LOINC) and results are either numeric or text, depending on the type of test. Radiology results are in test format. Laboratory and radiology records can be linked in the MDR to the encounter where the exam was ordered, enabling study of provider ordering patterns.

Financial Information

For direct care, information about costs originates from information in the Expense Assignment System (EAS). This system is a Tri-Service cost accounting system and contains costs, workload, and staffing information

about MTFs. The data in EAS, however, are highly aggregated. As a result, it was necessary for algorithms to be developed to estimate costs of MTF care at lower levels of aggregation. Estimated full and variable costs are in MDR and M2. For purchased care, there is no information about what it actually costs a private sector provider to render a service. Nonetheless, payment and billing information is available, such as the amount that TRICARE allowed for the service, the amount paid to the provider, the amount the patient paid out of pocket, and the amount of other health insurance payments. This information is also contained in the MDR and M2.

Staffing Information

There is no information at all about staffing in the private sector in MHS data systems. For direct care, the Defense Medical Human Resources System (DMHRS) is the source collection system for information about assigned and available staff at each MTF. In DMHRS, information is available at a person level. Data from DMHRS are aggregated and sent to EAS, and from there the information is also sent to MDR and M2.

NEW KNOWLEDGE

—NOTED PUBLICATIONS

National Health Spending in 2011: Overall Growth Remains Low, But Some Payers and Services Show Signs of Acceleration.

Hartman M, Martin AB, Benson J, Catlin A; the National Health Expenditure Accounts Team.

Health Aff (Millwood). 2013 Jan;32(1):87-99.

In this article the authors provide a detailed analysis of changes in health care spending in 2011, which experienced an annual growth rate of 3.9 percent—the third consecutive year of relatively slow growth. U.S. health-care spending in 2011 totaled \$2.7 trillion, or almost 18 percent of the nominal gross domestic product (GDP).

Although the overall growth in healthcare spending remained stable at 3.9 percent, the authors note that spending increases for personal healthcare goods and services accelerated slightly from 3.7 percent to 4.1 percent. This was primarily due to the use and intensity of services, such as spending for retail prescription drugs and the use of clinical and physician services. Growth slowed for hospital care services and certain nonpersonal healthcare spending categories. Additionally, there were divergent trends in spending



by payer: Medicaid growth slowed, while Medicare, private insurance, and out-of-pockets spending increased.

The article examines the effects of various factors on national health spending. The authors note that the recent recession decreased private insurance enrollment by 11.2 million as people lost jobs and benefits, increased Medicaid enrollment by 7.5 million, and created seven million more uninsured. The authors also discuss some of the minimal impacts of the recently enacted policies set by the Affordable Care Act (ACA) (where the most prominent provisions will not be implemented until 2014). Specifically, the ACA allows dependents to stay on their parent's insurance until the age of 26, which has led to higher enrollments but lower costs per enrollee. Moreover, the ACA provides a 50 percent discount on brandname medication offered to Medicare Part D enrollees who have reached the coverage gap or "doughnut hole," which has increased the use of brandname medications for that population and decreased beneficiary out-of-pocket spending. The ACA also extended prescription drug manufacturer rebates to additional Medicaid enrollment plans, which slowed the growth in Medicaid prescription drug spending in 2011.

Read more about this publication at <http://www.ncbi.nlm.nih.gov/pubmed/23297275>.

WHAT'S COMING UP

—TRICARE PHARMACY COPAY CHANGES

Analysts of pharmacy data files may see changes in pharmacy costs as a result of pharmacy copay changes that will soon go into effect. The Fiscal Year 2013 National Defense Authorization Act (NDAA) requires TRICARE to increase copays on brand-name and non-formulary medications that are not filled at military facilities. Copayments are a function of the drug class and fill location. For brand name medications, the copay will now be \$17 (up from \$12) for a 30-day supply filled at a retail network pharmacy and \$13 (up from \$9) for a 90-day supply filled through TRICARE Home Delivery. For non-formulary medications, the copay increase has been the most severe—an increase to \$45 and \$43 if they are ordered through a retail pharmacy and Home Delivery respectively, up from \$25. The law also states that after 2013, copays will increase based on the retiree cost-of-living adjustments. For generic medications, there will still be no copay if they are filled through TRICARE Home Delivery, and the copay for those that are filled at a network pharmacy will remain at \$5.

A full description of the copay changes can be found at <http://www.tricare.mil/CoveredServices/BenefitUpdates/Archives/PharmacyCopayChanges.aspx>.

TIPS AND TRICKS:

—LINKING ACROSS DATA SOURCES

Analysts in the MHS are often asked questions that require using data from multiple sources, especially when comparing data between direct care and purchased care. Business Objects allows users to link data elements from different classes (or folders) and create reports that incorporate data from each class in a single report. This section will build on a "Tips and Tricks" article presented in Volume 2, Issue 4, and detail how to link across different data sources.

LINKING - EXAMPLE

An example of linking across data sources would be to look at ER costs in a given year for a specific MTF Service Area (e.g., 0124) in both direct care and purchased care.

1. Construct and run a query against the **Direct Care Professional Encounters (CAPER) Detail** subclass using the following constraints:

Result Objects - "FY," "FM," and "Full Cost"

Conditions - "FY Equal to 2012"

and "MTF Service Area Equal to 0124"

and "MEPRS3 Code Equal to BIA"

and "E&M Code 1 Between 99281 and 99285"

or "E&M Code 2 Between 99281 and 99285"

or "E&M Code 3 Between 99281 and 99285"

2. Insert a new report by right-clicking on the report tab and selecting "Insert Report." Then, insert a new table by selecting the "Insert" menu, selecting "Table," and then clicking anywhere in the report. Select "Build a new query on the universe currently in use."



LINKING - EXAMPLE

3. Construct and run a query against the **Purchased Care Non-institutional (TEDNI) Detail** subclass using the following constraints:

Results Objects - “FY,” “FM,” and “Amount Paid, Total”

Conditions - “FY Equal to 2012”

and “MTF Service Area Equal to 0124”

and “Place of Serv Equal to 23”

and “Procedure Code between 99281 and 99285”


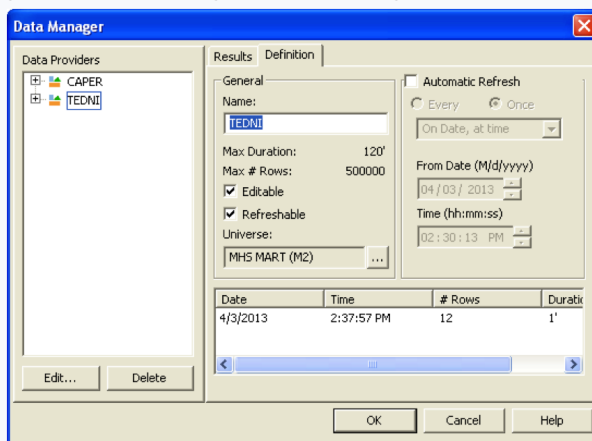
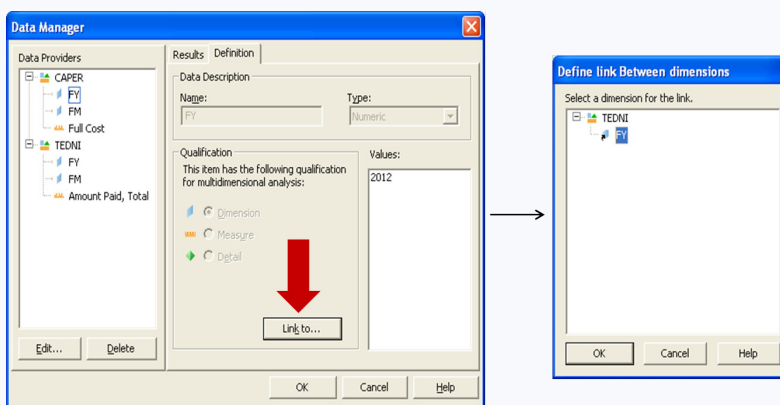
4. Generally, when there is more than one query, it is helpful to rename the queries. Either click on the Data Manager icon , or click on the “Data” menu and select “View Data.” Select one of the Data Providers (usually called something like “Query 1 with MHS Mart (M2)”) and click on the “Definition” tab. Under “Name:” type a more informative name, such as “CAPER” or “TEDNI” (Figure 1).

Figure 1. Renaming Queries Using the Data Manager



5. While still in the Data Manager, click on the plus (+) signs next to the Data Provider names to reveal the data elements in each. Make sure the “Definition” tab is still selected and then click on FY under one of the Data Providers. Now, click the “Link to...” button, and a pop-up window will appear with data elements from other Data Providers that can be linked. Select “FY,” and click “OK” (Figure 2). Now the “FY” from the CAPER is linked to the “FY” from the TEDNI. Repeat the same procedure for “FM.”

Figure 2. Linking Data Providers Using the Data Manager



LINKING - EXAMPLE

- Create another new report (you can rename it by right-clicking on the tab and selecting “Rename Report”). Insert another new table, and this time select “Use existing data from the document.” Since they are linked, select “FY” and “FM” (from either CAPER or TEDNI), and select “Full Cost” (from CAPER) and “Amount Paid, Total” (from TEDNI) (Figure 3). If the variables are properly linked, you will get the same “Full Cost” and “Amount Paid, Total” in each month as appeared in the separate CAPER and TEDNI reports (Figure 4). You can now easily compare direct care and purchased care costs for ER visits in a specific MTF Service Area.

Figure 3. Inserting a New Table with Linked Variables

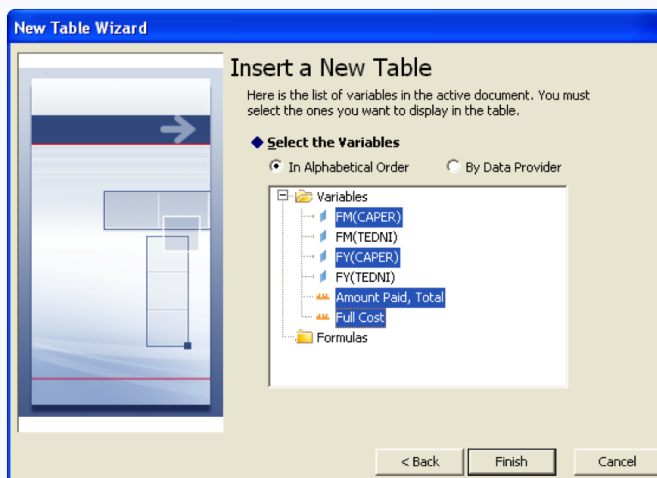


Figure 4. Sample Table (Partial) with Linked Data

FY(CAPER)	FM(CAPER)	Full Cost	Amount Paid, Total
2012	1	\$300,244	\$111,753
2012	2	\$205,187	\$119,739
2012	3	\$310,268	\$132,035
2012	4	\$301,353	\$128,097
2012	5	\$333,553	\$122,599

Note: Variables should only be linked if they have the same (or similar) list of values. For example, “FM” always has the values 1 to 12 and can be linked to “FM” from other data sources. DMIS IDs can be linked across data sources, but a “DMIS ID” should not be linked to a “DMIS ID Name,” because they do not have the same values. Also, user-created local variables cannot be linked, but User Defined Objects (UDOs) can be.

This is a relatively simple example that easily could have been performed in Excel, but linking data across data sources in M2 has many different applications, including:

- Linking data to a reference tables in M2
- Linking data to external reference files
- Using one set of data to limit another set of data
- Use UDOs to link multiple fields at once (rather than one at a time)



KNOWLEDGE SOURCES

—PROFESSIONAL ORGANIZATIONS

The following organization provides opportunities for professional growth, knowledge attainment, and networking.

Healthcare Information and Management Systems Society (HIMSS)

The Healthcare Information and Management Systems Society (HIMSS) is a cause-based not-for-profit organization exclusively focused on providing global leadership for the optimal use of information technology (IT) and management systems. HIMSS represents nearly 50,000 individual members, including 570 corporate members and more than 225 not-for-profit partner organizations that share its mission of transforming healthcare through the effective use of information technology and management systems. HIMSS provides educational resources on a variety of topics such as meaningful use and certification for health care reform, electronic health records, clinical informatics, data privacy and security, interoperability, and standards. To find out more, including information on membership and their 2013 Annual Conference and Exhibition, see: www.himss.org

IN THE NEXT ISSUE

The next issue of *Healthcare Analytics in Navy Medicine* will focus on data privacy rules and regulations and their application in the analytic process. Data protection procedures to protect and support individual privacy will be discussed. Moreover, the specific steps to obtain data sharing agreements for varying types of data will be explained.

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